

**ARIZONA'S TELECOMMUNICATION  
ORGANIZATIONAL STRUCTURE & STRATEGIC PLAN  
By Galen Updike  
Manager, Telecommunications Development - GITA**

The purpose of this document is to propose an organization and strategic plan that recognizes telecommunications as *critical infrastructure* in the State of Arizona. The stakes are enormous. The benefits to Arizona are similar to those accruing from the development of other critical infrastructures such as transportation, water, and power.

However, Arizona currently has disparate communities of interest formulating their own, often conflicting, long range telecom plans. A shift is needed, restoring the elements of a State Telecom Planning Structure and process recommended in 1995 by the *Governor's Commission for the Study of the Telecommunication and Information Industry in Arizona* and set into motion in 1996.

**KEY EVENTS REQUIRING A TELECOM STRUCTURE AND STRATEGIC PLAN**

The year 1996 was a pivotal for telecommunications in the US. In that year, Congress passed a far reaching Telecommunications Act, which changed the direction of the telecom industry and empowered the FCC with new authority to compel competitiveness and encourage technological advances. In concert with that Act and via a separate Executive Order, Vice President Al Gore assumed a leadership role in the dissemination of the Internet to rural America. He said, "*We must make sure that our national information highway bypasses no one. We cannot allow this country, or any community within our country, to become a communications ghost town. For, to be left off the beaten track in the information age is to be cut off from the future*".

The Benton Foundation, a public policy think-tank, was tasked to review Telecommunications policy in the U.S. and within each State. Their published findings provide a comprehensive overview of the various State strategic plans extant in 1996, which would bring about the necessary changes and make the Information Age a reality for all Americans.

The following statements from the Introduction of the Benton report summarizes their findings. (See Appendix 1 for full Statement)

*"If history is a guide, it is state, not federal policy that will largely determine which direction we go. In fact, we have already seen states emerge as the key policy arena where telecommunications and the lives of real people intersect."*

*"This report provides a snapshot of the direction states are currently moving on the telecommunications front... In it we examine the planning processes and infrastructure commitments that states are instituting in regards to telecommunications.... While this publication is not comprehensive, it provides a starting point for state leaders to assess their state's progress in the context of all 50 states."*

## **Arizona's Response – A Telecommunication Planning Structure - 1995-96**

The Benton study shows that Arizona had already responded, as had most States, to the promise of robust telecommunications and Internet connectivity, with a plan and a new set of imperatives regarding Telecommunications. In 1994 a blue ribbon commission was tasked to come up with recommendations that would provide structure and policy to move Arizona forward, which the Benton report summarizes. (Quotes from the Benton's report are in *italics*. See complete Benton report for Arizona in Appendix 2).

The Governor's Commission *for the Study of the Telecommunications and Information Industry* was created by Executive Order 94-12 ( issued in July 1994). *The commission consisted of representatives of the governor's office, the departments of administration and commerce, the Senate and the House of Representatives, the Arizona State Public Information Network (ASPIN), and the state economic development agency.* In 1995 the commission's final report made a number of long-range recommendations regarding Arizona's telecommunications needs and solutions to those needs.

The Arizona Legislature translated those recommendations into statute the same year, with implementation beginning at the start of Fiscal 1996. Two new organizations were funded, the Telecommunications Policy Office (TPO) within the Governor's office to create and manage statewide strategic plans, and the Arizona Telecommunication and Information Council (ATIC) which, in part, was to *support the Telecommunications Policy Office in advocating legislation and building awareness of telecommunications opportunities among Arizona's businesses and citizens.*

Also recommended was the creation of an Arizona Universal Service Fund, managed by the Arizona Corporation Commission. Policy makers were urged to *pay special attention during the transition period to the needs of rural, border, and Native American communities; and to create a universal service support mechanism to ensure all residents have access to affordable basic phone service.*

Regarding the State owned phone service, the Commission recommended that there be devised ... *a plan to integrate the state's networks into one shared backbone, and to find a way to contract for telecommunications services in a way that reduces redundancy and gets the state "out of the telecommunications business".*

## **Going Forward to 2004**

Eight years later, in 2004, the landscape has changed, some for the better, some for the worse. Portions of the structure and policy recommended by the commission's 1995 report are still extant, especially those concerning the Arizona Corporation Commission and rural Arizona, which have been enlarged with the Telecommunications Open Partnership for Arizona (TOPAZ) initiatives.

However, the Legislature has had to speak again (the last time in 2003) to privatize the State owned telephone system, and get the State "out of the telecommunications business."

The structure for strategic telecommunications planning, originally envisioned as being made up of a *joint effort of the Department of Administration, the new Telecommunication Policy Office...and the state's chief information officer... working closely to develop an action plan*

*for Arizona's information infrastructure is **not** a continuing reality. Proposed now is a renewal of that centralized strategic planning structure which, through its various components, coordinates statewide telecommunications policy and activities, convenes interested sectors to address shared telecommunications interests, assists in the development of plans for public and private telecommunications systems, and advises the governor on policy and procurement practices.*

### **The Best of Other State Organization and their respective Plans**

By instituting these changes, **Arizona will only be playing catch-up to states** that have more mature strategic planning organizations and processes. But even the catch-up, if done early, can have very positive results for Arizona, especially with development of robust broadband telecom infrastructure in our rural areas. Diverse studies have indicated as much as \$8.5 Billion GDP increase in Arizona's economy, a \$100 Million annual increase in revenue for State government, and 11,500 new jobs, most in hi-tech areas.\* For those states identified below, such benefits are proven, including superior telecommunications resources and a better competitive positioning in a global economy.

In 2003, a nationwide study was commissioned by *TechNet* (a bipartisan network of CEO's which promotes the growth of Technology through long-term relationships between Technology Leaders and Policymakers) which identified the Top Ten States, as indexed by their respective State policies regarding Broadband deployment and overall robustness and health of Telecommunications infrastructure. *"The State Broadband Index highlights the important role of the states in determining our nation's broadband future" stated Eric Benhamou, Chairman of 3Com Corporation and Palm "With the right policies and leadership, states can lay the groundwork for the next-generation infrastructure that will drive technological and economic growth, and improve quality of life."*

Following are the States identified as the Top Ten, in order. (Arizona ranked 12<sup>th</sup>)  
The [Broadband Index Top 10 states](#) are:

- |                          |                               |
|--------------------------|-------------------------------|
| 1. Michigan              | 6. <a href="#">Washington</a> |
| 2. Florida               | 7. Kansas                     |
| 3. Missouri              | 8. Virginia                   |
| 4. <a href="#">Texas</a> | 9. Colorado                   |
| 5. Ohio                  | 10. Iowa                      |

Of these 10 States, eight have telecommunications strategic planning via a public/private economic development organization appointed by the Governor and/or defined by legislative statute. The exceptions, Florida and Virginia, have many elements of public/private strategic planning, but leadership for that planning is vested in their respective Technology departments, with the State CIO (Virginia's Title for CIO is Secretary of Technology) responsible for both Telecom and Data networks. The proposed Arizona organization is a hybrid of both scenarios.

(See details of four leading States strategic planning organizations in Appendix 3. For a summary of rating criteria for Top Ten States, see Appendix 4)

\* Source: Center for a Sound Economy (CSE) Report: State Economies can Benefit from Broadband Deployment, Wayne T. Brough, Ph.D, 01 Dec 2003

## Arizona Telecommunication Strategic Plan Summary

Following is a brief needs analysis and description of the barriers to overcome and issues to be solved, and a listing of strategies or policy objectives to be included in a State-wide Strategic Plan.

### Barriers to Middle Mile Deployment

1. **Return on Investment:** Broadband deployment requires a balance between deployment costs, affordable monthly end user rates, and the length of time for the provider's ROI, or Return on Investment. Today telecom providers are looking at an ROI requirement of 18 months - two years. Considering the cost of middle-mile investment, this is often not a feasible model in rural and under served areas. Public and private organizations need some form of long term, low cost financing.
2. **Access to Rights-of-Way:** Federal, tribal, state and local Rights-of-Way issues such as multiple jurisdiction permitting, delayed application approvals, and unequal and prohibitive fees have been significant barriers and disincentives for deployment of services.
3. **Planning and Coordination:** While there are a number of telecom related initiatives underway in Arizona, there is no coordinated statewide strategy. Through coordination and planning Arizona can more effectively leverage existing resources and be eligible for millions of grant dollars to benefit community development. *(For Detailed discussion of Major Needs, see Page 9)*

### Strategies

Arizona needs to remove barriers and develop public policies and market-driven strategies that will encourage competition, private-sector investment in, and rapid deployment of advanced telecommunications services and affordable broadband Internet access throughout the State. These services are essential to the educational, economic and development of Arizona's communities.

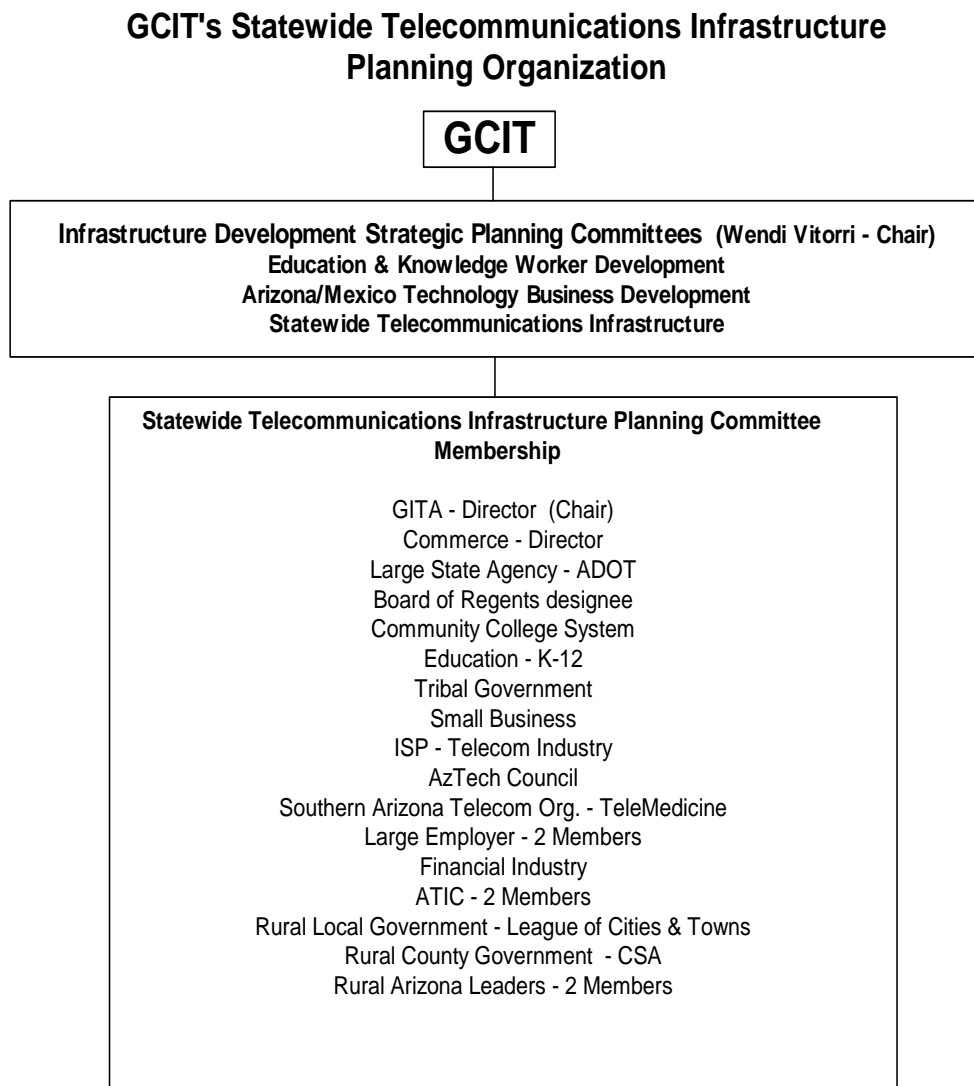
The following strategies or initiatives are recommended: *(See Strategy details starting on page 10)*

1. **Statewide Telecom Planning and Coordination.** Create an Telecommunications Infrastructure Committee and Regional Councils that will provide authoritative forums for discussion, produce statewide and regional telecom plans, and facilitate coordination of the many statewide telecom initiatives.
2. **Commerce Funding Authority and Telecom Financing.** Utilize Commerce, and where applicable, the Greater Arizona Development Authority's (GADA) funding authorities to incorporate telecommunications as a critical infrastructure, to facilitate incentives for low cost, long term financing, and to encourage development of open and redundant middle-mile and last-mile telecom solutions.
3. **Aggregate Demand and Procurement of Telecom Services.** Use the principles identified as part of Project TOPAZ to aggregate state and local government demand with private sector demand to procure advanced telecom services.
4. **Federal Funding.** Provide state assistance to regions or *communities of interest* to identify, qualify, and apply for federal grants, subsidies and loans.
5. **Rights-of-Way.** Expedite access to local, state, federal and tribal rights-of-way. Facilitate coordination and recommendations to expedite right-of-way permitting processes for last mile and middle mile inter-city/town transport.
6. **Community and Regional Assessments.** Promote and support Regional/Community Telecommunications Assessments

## Arizona Telecommunication Organizational Planning Structures

The following organizational chart provides a visualization of the various councils and committees that will facilitate Arizona's strategic telecommunications plans to be implemented. Other subcommittees, advisory committees and task teams will naturally grow from the basic structure visualized here.

Figure1. Organizational Structure



### PURPOSE

The overall purpose of the organizational structure is to elevate Telecommunications infrastructure to be considered as critical infrastructure to the State's overall well being, similar to the infrastructures of Water, Power and Transportation. To the extent there is not a ubiquitous and robust telecommunications infrastructure, Arizona's expectation for quality of life will be diminished. This has been repeatedly proven over the years in study after study, and is empirically understood by those who live in areas without adequate telecommunication resources. Given today's emphasis on information

exchange and a global economy, it is an absolute necessity that telecommunications decision making be continuously reviewed and acted upon at the highest levels of State government, and by the business and education communities.

## **BACKGROUND**

### **Structural deficiency**

To date, in Arizona, there has not been a continuous organizational structure reflective of the importance of Telecommunications role in Arizona's future development. In 1994, the State commissioned a study and report that identified for Arizona's policy makers, an effective new structure visible to the State's elected leadership. The elements of the new structure were then funded by the Legislature and subsequently implemented in their various organizational components. But with changes in administration, changes in agendas, and with periods of budget crisis, those organizational elements were de-funded or changed, and subsequently diminished in importance. The proposed structure will restore and enhance the 1995 envisioned organization.

### **Strategic Plan Deficiency**

Currently Arizona has no state-wide Telecommunication Strategic plan. Various agencies and political subdivisions have their own strategic plans (as do some large corporations). In their aggregate, government usage represents only a minority of the total telecom usage and planning needs of the State, public and private. Unfortunately strategic telecom decisions are made without the benefit of State-wide policy or needs, or as part of statewide or regional plans. They are most often made based on the financial needs of individual Telecom carriers whose decision making structure, and economic and financial interests, reside outside of Arizona.

## **SUMMARY OF ORGANIZATIONAL COMPONENTS AND FUNCTIONS**

From a multitude of studies, those States identified as being in the Top Ten have similar organizational structures to the ones proposed herein.

**Telecommunications Infrastructure Sub-Committee (TISC).** This body is the key component of the overall structure. It will be the mission of TISC to chart a long-range roadmap and strategic plan for State-wide Telecommunications. This plan will be continuously communicated to the Policy makers of the State, including the Legislature and the Executive Branch. TISC will also concern itself with barriers to Broadband deployment, especially in the rural areas of the State. Funding issues, technology issues, right-of-way issues, economic development issues, quality-of-life issues will all be the concerns of this Committee. The Committee will also serve as a source of unbiased information for use by the public. States, which have employed such a committee or council effectively have been propelled to an enviable and economically rewarding status, and have generally deployed broadband to their citizens. (It should be noted that every state identified as being a "Top Ten State" has a derivation of such a Council)

Members should be from varied backgrounds, with Telecommunication or Economic development interests, and proven leadership abilities. The State of Texas's organization provides a model. (See Appendix 3 – Texas TPOC Membership)

Possible funding sources for TISC include specific Federal grants, monies collected as fines by the ACC from Telecom interests, discretionary funds from the Governor's office, an appropriation by the Legislature via increased funding to Commerce or to other involved agencies for their participation, or grants from foundations or private industry.

**Additional organizations Adjunct to TISC.** From time to time, sub-councils and committees will be needed as part of a deliberative process. Two are immediately obvious. (Some States have six or seven, coordinated and tasked by their State-wide Council)

**ATIC** is currently the thought leader in Arizona for Telecommunications policy. It was created via the GSPD initiatives at the same time the Governor's Telecom Policy Office was created by the Legislature to serve as a public resource for that office. It remains a key telecom policy organization today. ATIC has a formal structure, easily adapted to TISC's use.

**A Technology Advisory Committee** could serve as a technical resource for TISC, with membership from the Vendor and Technology communities. The Committee should be organized and appointed by TISC with advice from Commerce, GITA, and the Directors Strategic Telecom Committee. Membership can vary in size as needed.

**Regional Planning Councils.** Membership in these Councils will be initially selected with help from Commerce (Commerce is currently involved in an outreach program encouraging creation of regional bodies to handle critical infrastructure, of which telecom is a part). The mission of the Regional Planning Councils will be to identify Telecom needs within their respective regions, coordinate their needs within an overall plan, help aggregate demand for telecom services in their regions, and with support from the TISC, come up with solutions from a local perspective, including funding, middle-mile and last-mile solutions. They will also be the main source of Federal grant applications, which require substantial local support to be successful. Eleven economic regions have been identified by the Commerce Dept.

## **Background Details of Needs Analysis and Corresponding Strategy Details**

### **Need for Advanced Telecom and Broadband Deployment**

In 2002, the Government Information Technology Agency (GITA) estimated that less than half of Arizona's 87 cities and towns with populations over 500 had broadband resources such as cable, DSL, or fixed wireless. Since that time, through initiatives like TOPAZ, community assessments, the Arizona Telemedicine Program, and K-12 activities, the numbers have improved. But even though more rural communities now have services, many still face middle and last-mile deficits, or experience much higher service costs than their urban counterparts.

These communities often have the highest unemployment and poverty rates. They are typically most in need of economic revitalization, yet they lack the necessary telecom infrastructure to advance. Critical public services impacted by telecom, including education, health care and government, are much more expensive for these communities. Furthermore, they have limited access to new services such as distance learning, telemedicine and e-Government. In short, their citizens experience a lesser quality of life.

### **Need for Middle Mile Deployment**

There are two primary telecom services required to deploy broadband into a community – Last-Mile and Middle-Mile.

The Last-Mile is the Internet connection between the Internet service provider (ISP) and end users (businesses, homes, schools, etc). The Middle-Mile is the high capacity trunk line and associated infrastructure connecting ISP's to the Internet via backbone points-of-presence in Phoenix and Tucson, and in some cases, in Albuquerque or Los Angeles.

Last-Mile broadband deployment is becoming more cost-effective because of technology advances, even in rural and underserved areas of the state.

**Though an increasing number of companies have expressed interest in providing last-mile services in these underserved or un-served areas, to deploy their networks at reasonable rates to the consumer, telecom providers must have access to sufficient and reasonably priced middle-mile connections.**

There is an estimated \$100M requirement to address the Middle-Mile deficiencies in Arizona. If Middle-Mile infrastructure is not available at reasonable rates from the Local Exchange Carriers, communities or last mile providers must construct their own Middle-Mile infrastructure. Means must be found to alleviate the burden of these build-out costs from normal Last-Mile charges. Burdening last-mile charges with these one time costs will likely mean the difference whether or not the Last-Mile can be built or be economically viable.



## Strategy Details

(Corresponds to the six summary strategies listed above)

1. **Statewide Telecom Planning and Coordination.** The Telecommunication Infrastructure Committee will provide the vision, framework and strategic plan for the development of telecom infrastructure and will provide coordination for initiatives such as TOPAZ, Arizona Telemedicine Program, Universities and Community Colleges, NAUNET, SACCNet, CANAMEX Corridor, etc.

The Council would be appointed from within branches of Government, Education and from the Public, including the Arizona Telecommunications and Information Council. It would coordinate with regional councils and with a state agency-based telecom team (TEGC).

Regional Planning Councils will be developed with experts and leaders from local government agencies, public interest groups, and the commercial sector. Advisory subcommittees should be organized for each of these Councils, whose members are selected from the telecommunications industry.

2. **Commerce Funding Authority and Telecom Financing:** Funding may come from sources such as nonprofit foundations, the Federal or state Universal Service Funds, tax incentives, bonding, tribal gambling, E-rate, and other Federal programs including Homeland Security.

Where the law allows, owners of funded networks may be private, public or public/private partnerships. Networks using state or federal funds should be open on an equal basis to all.

3. **Aggregation Demand for and Procurement of Telecom Services:** Topaz continues to be a primary guideline in defining public/private efforts to provision rural Arizona with broadband infrastructure. Efforts should be renewed to benefit rural Arizona with TOPAZ. The new Economic Development Regions identified by Commerce Department can now be included in both deployment and aggregation efforts. In order for future success, needy local communities must be encouraged to respond positively to TOPAZ as a Statewide policy, and work with regional and statewide councils to aggregate their Telecom needs.

Along with demand aggregation, TOPAZ also requires that procurement activities be aggregated. The State's various local and statewide procurement organizations should be engaged to provide leadership for TOPAZ based agreements or contract negotiations. Procurement organizations should provide expertise for negotiating terms, prices and volume discounts, as well as commitments for increased deployment of broadband infrastructure. Subsequent agreements would then be forwarded to Regional Councils or TISC.

4. **Federal Funding:** The State of Arizona should provide resources from within the Executive branch to identify, qualify, and help communities of interest apply for federal grants, subsidies and loans directed at both the public and private sector.

Arizona lags far behind other states in the acquisition of Federal grants, subsidies and loans for Broadband deployment. Currently, about \$8 Billion is earmarked nationally for Telecommunications subsidy and infrastructure deployment. Arizona's annual fair share, based on population alone, should be in the \$200-\$250 Million range. Over the last 5 years, Arizona's actual receipt from these programs is in the range of \$80 to \$120 Million annually. The State of Arizona needs to assist communities of interest in applying for these federal funds. The Arizona Telecommunication Planning Council and regional councils can be key players in this effort. Some of these resources, however, should be located in Washington

DC, close to the source of decision making. Arizona's congressional and senatorial delegations have been under-utilized in obtaining Federal funds for Broadband deployment. They should be regularly contacted and made aware of the State's local and regional broadband needs and asked to help in seeking the earmarked funds.

It should be an axiomatic that before State or local funds are used for Broadband deployment, certified efforts have been made to secure Federal funds. Unfortunately many Federal funds are directed at subsidizing high recurring telecom usage costs. Emphasis should be placed on funds that develop open infrastructure (thus increasing supply or availability of scarce services or infrastructure). Grants or subsidies which only provide closed networks or only support high recurring costs should have a lower priority than those that support or subsidize open infrastructure build-out.

5. **Rights-of-Way:** Create a committee to facilitate coordination and recommendations for legislation to expedite access to local, state, federal and tribal rights-of-ways. Executive directives to enable one-stop-shopping, consistent fees, and expedited right-of-way permitting processes for last-mile and middle-mile inter-city/town transport. Every effort will be made to see that State owned rights-of-way will be made available for Broadband deployment. Other governmental organizations and political subdivisions are to be encouraged to allow rights-of-way under their jurisdictions to be utilized at little or no cost for Broadband deployment.

State of Arizona laws and Executive Orders regarding Rights of Way issues will be the primary source of policy. Where there are voids or conflicts, the various Councils will provide leadership in defining areas of conflict and will separately pursue solutions between parties or relief via Executive order, the Legislature, or as a friend of the court.

6. **Community and Regional Assessments:** To enable regions or communities of interest to identify community telecom assets, define Telecom requirements, craft regional solutions and find funding mechanisms for those solutions. These assessments should be sourced from and directed by Commerce

The regions will likely be the eleven large Economic Development Regions defined by the Department of Commerce. They take advantage of key economic, political and geographic realities in the State. These Economic Development Areas will be a primary focus to more easily aggregate demand and minimize conflicts of interest as regional telecommunication projects are defined. It is expected that smaller communities of interest will come together within these regions

In 2002 the Legislature appropriated \$500K for Community and Regional telecom assessments. Additional appropriations should be provided for community assessments. Most important, findings from previous assessments need to be acted upon in a coordinated and prioritized manner. Outcomes of these assessments should be incorporated into the statewide plan and be reported to responsible parties within Dept. of Commerce, to GITA, to the Arizona Telecommunication Planning Council, to Regional Telecom councils, to the Telecom Taskforce Team, and formally reported to representatives of the geographic entities surveyed and assessed.

The most significant barriers limiting the expansion of telecommunications capability thus far identified in these assessments include:

- limited capacity on inter-city transport facilities;
- limited capacity and capabilities of some local access networks;
- limited coverage of high-speed Internet service;
- poor cellular telephone coverage; and
- missing redundant inter-city transport.

## APPENDIX 1

### Benton Foundation Introduction and Overview of State by State Report (1996)

(<http://www.benton.org/publibrary/state/introduction.html>)

## Introduction

*"We must make sure that our national information highway bypasses no one. We cannot allow this country, or any community within our country, to become a communications ghost town. For to be left off the beaten track in the information age is to be cut off from the future."* -- Vice President Al Gore

## Overview

Today we stand in the midst of a technology explosion that rivals the telephone, airplane, and television in terms of the impact it will have on our lives, society, and world view. Who has access to the emerging telecommunications technology and how creative we are in capitalizing on its capacities will vastly shape our future as a society and as a nation. The potential is vast -- telecommunications offers us new tools that could help address the pressure to balance family and work; to bring rural areas into the economic mainstream; and to add many more voices to our policymaking discussions. The risks of bad policy decisions are immense -- intense isolation, an enlarged chasm between the rich and the poor, and a loss of privacy are real dangers. If history is a guide, it is state, not federal, policy that will largely determine which direction we go.

In fact, we have already seen states emerge as the key policy arena where telecommunications and the lives of real people intersect. To date, the federal government has played a fairly small role in addressing issues of infrastructure, applications, and access. It has focused instead on stimulating competition and, to a lesser degree, regulation of the industry as tools to address these issues. In contrast, states are increasingly setting concrete goals to bring telecommunications to citizens through schools, libraries, and public information kiosks. They are supporting programs that enhance community and rural economic development and infrastructure that attracts businesses.

This report provides a snapshot of the direction states are currently moving on the telecommunications front. In it we examine the planning processes and infrastructure commitments that states are instituting in regards to telecommunications. Our inquiry focuses on two areas: initiatives to expand citizen access and increase civic participation and efforts to enhance economic development. While this publication is not comprehensive, it provides a starting point for state leaders to assess their state's progress in the context of all 50 states.

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## State trends and highlights

### Citizen participation and public access to information

If information is, in the words of Thomas Jefferson, "the currency of democracy," dissemination of information across all sectors of American society -- regardless of race, socioeconomic status, or physical ability -- is vital to each citizen's political empowerment.

Most states want to deliver government and other public information online. For individuals with a computer and modem, information about the federal government, congressional representatives, and pending federal legislation is readily available in several forms. Even more federal government information is available to those with access to the World Wide Web. However, state-level information is often sketchy or unavailable, in part due to the cost of providing and maintaining it online.

Several states have developed public-private partnerships to provide public information services to citizens and business. They include Florida, Indiana, Kansas, Nebraska, and New Mexico. Arkansas has just passed legislation authorizing creation of a similar online system.

Some states, such as Maryland, have developed free dial-up systems so that citizens can get basic government, state agency, library, and legislative information online. These states' libraries often have public access terminals so that those without computers at home can access the information. Such services are usually state funded, either through the library system or through education funds. However, the legal and business communities have driven a movement in many states to provide much more detailed information online and to facilitate easy access to information used in commerce and business. Online access to information such as real estate filings, UCC filings, or licensing has been demanded by businesses, as has the ability to search these state databases online. These functions are well beyond the capacity of state governments to provide at this time.

Projects in several states aim to provide a universally accessible forum for citizen participation. Among the most notable are community networks that have sprung up in numerous areas, often with the collaboration of local government. Community networks, or freenets (highlighted in a section at the end of this report), are dial-up bulletin boards that local residents can access free of charge using a computer and modem or a public terminal at a local library. Many freenets provide email addresses and Internet access for their members in addition to community calendars, postings of political and election information, and bulletin board "conversation areas" where participants can discuss local or other issues on an ongoing basis. One "teledemocracy" model of community networks allows citizens to directly ask questions of candidates (by posting them on the bulletin board). The candidates respond in the same online area.

Two excellent examples of the potential of telecommunications technology to improve the lives of citizens, enhance participation, and connect people to each other are profiled in this report. The Minnesota E-Democracy Project illustrates how telecommunications technology can help citizens find ways to communicate with politicians and help them hold elected officials accountable. The Maine Meeting Place (MMP) offers a low-tech model of a system that connects people with disabilities in rural areas to other people with common needs. Although MMP was started outside of state or local government, it is now supported in part by state funding.

### **Economic development**

Telecommunications technologies increasingly serve as an important tool in many aspects of states' economic development efforts, from planning and networking, to skill training and development, to enhancing the capacities of in-state businesses to compete at home and internationally. A well-developed telecommunications infrastructure is particularly vital to the economic and business connections of geographically isolated areas.

State administrators realize that telecommunications infrastructure is becoming increasingly important to attracting new business. Some states, such as North Carolina, have been working intensively on infrastructure development and can offer businesses almost 100 percent access to digital switching technology and fiber optic network capacity, which present a strong draw for businesses relying on information and communications resources.

Many state officials believe that telecommunications infrastructure will ultimately be at least as important as the interstate highway system in terms of the economic development of rural areas, in that it provides links between outlying communities and major consumer markets. An anecdote outlined in the National Governors Association's publication, **Telecommunications: The Next American Revolution**, underscores this point: Already the emergence of advanced communications has reversed out-migration and declining job opportunities in many non-metropolitan areas. In 1989 Premium

Standard Farms (PSF), a pork-production facility, chose to locate its facilities near Princeton, Missouri, a community of 3,600 residents 90 miles northwest of Kansas City. PSF selected Princeton as the site for its facility in part because the local, independent phone company could offer electronic, fully digital communications. Initially employing only three people, PSF's workforce grew to 700 employees within five years. The company's need for high-technology telecommunications continues to grow. This year the local telephone company will install a direct fiber optic link between its facilities and PSF.<sup>1</sup> Many states have posted information on the Internet about demographics, geography, and other information designed to provide a "first stop" for businesses that might be considering locating in-state. Many of these pages allow users to fill in an email form to communicate with a government agency and to request more information.

Telecommunications networks can be used to connect small and large businesses for bidding on contracts, to create integrated networks for manufacturing or supplying specialty items, and to access technical support. Several states have placed contract bidding information online, allowing anyone to access information about what goods or services are available for bid and instructions on how to bid.

### **Infrastructure investment and operating costs**

States are pursuing varying ways of updating or enhancing telecommunications capacity. For most states infrastructure enhancement or construction consists of laying of fiber optic cable, which will enable high-speed, high-traffic connections for multitudes of users. Some states, such as Iowa and Oklahoma, and cities, such as Austin, Texas, have chosen to partly or totally finance and control infrastructure construction. Several other states have made agreements for private investment in infrastructure improvement. In return the states agree to long-term contracts to purchase services from private providers after completion of the network. Some states, such as Kentucky, are pursuing a mixed strategy -- working with private interests to develop a statewide fiber optic backbone that the state will connect to locally at several access points.

Estimates of the cost to create a statewide infrastructure vary. Iowa will spend about \$85 million to build its own state-controlled network. The National Association of State Telecommunications Directors pegs average annual state telecommunications budgets at about \$27 million per state. According to another report, state governments spend 1-2 percent of their annual resources on information resources.<sup>2</sup>

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### **Regulatory activity**

Although this report gathers some information on state planning processes, we have not extensively highlighted regulatory activity. There is, however, a great deal of law and regulatory change under way in many states, particularly regarding infrastructure development, competition, and universal access to telecommunications services. Thirty-eight states have enacted legislation that allows some form of competition in local telephone service provision. Most states are planning or working to implement a universal access strategy. The primary funding mechanisms are contributions by telecommunications service providers to a statewide universal service fund.

A recent report analyzing the universal service issues being debated in the states has been released in Arizona under the auspices of the Governor's Telecommunication Policy Office. The report, **Universal Service to Universal Access**, describes the current status of federal and state government programs designed to implement and manage universal service.<sup>3</sup>

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## **NTIA/TIIAP grants**

The U.S. Commerce Department's National Telecommunications and Information Administration (NTIA) serves as the principal adviser to the President, Vice President, and Secretary of Commerce on domestic and international communications and information issues and represents the executive branch before Congress, other federal agencies, foreign governments, and international organizations. The Telecommunications and Information Infrastructure Assistance Program (TIIAP) is part of the NTIA. TIIAP provides matching grants to state and local governments and nonprofit organizations to help them access and use new telecommunications technologies. Grants are awarded after a competitive merit review process. Grants that were awarded in 1995, as well as updates on some grants that were issued in 1994, are included in this report.

### **Using this guide**

As noted above, this report is intended as a starting point for state officials and others to assess their respective state's progress in the context of all 50 states. Each chapter includes a general overview of the information infrastructure in that state, a summary of legislative activity, and descriptions of technological applications.

### **Methodology**

Research for this publication included articles, legislative initiatives, and interviews with individuals involved in telecommunications in every state. During the research and production phase, which took several months, additional initiatives were developed and further progress was made in the states. In some cases it is possible that we may not have located the right individuals or information to create a comprehensive picture. For almost all states the information presented here comes directly from state officials, local media reports, state reports, and other interviews.

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## **Notes**

1. Telecommunications: The Next American Revolution, National Governor's Association, 1994 (Washington, DC).
2. NASIRE Resource Management Organizational Structures: 1994, National Association of State Information Resource Executives.
3. Universal Service to Universal Access: The Paradigm Shift in Citizens' Use of Telecommunications, Mark Goldstein and Richard Gooding, 1996, under State of Arizona Contract A6-0028-001.

## APPENDIX 2

### Benton Foundation Report - Arizona (Part of a 50 State Report – published in 1996)

#### Arizona

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##### *Overview*

Arizona's state government networks are run over leased lines but operated by the state. All state government agencies are currently being surveyed about their information and telecommunications infrastructure needs. This joint effort of the Department of Administration, the new Telecommunication Policy Office, and the state's total quality management managers will produce a plan to integrate the state's networks into one shared backbone, and decide how to contract for telecommunications services in a way that reduces redundancy and gets the state "out of the telecommunications business," according to one participant. In addition, the director of the Telecommunications Policy Office and the state's chief information officer are working closely to develop an action plan for Arizona's information infrastructure.

The legislature's Arizona Corporation Commission has rules pending that will establish a formal Arizona Universal Service Fund. If approval is granted, Arizona will join some 16 other states with similar programs.

##### *Legislation*

1995 Ariz. SB 1258 (A.R.S. § 41-108) created the Telecommunications Policy Office, which has been in operation since July 1985. The office coordinates statewide telecommunications policy and activities, convenes interested sectors to address shared telecommunications interests, assists in the development of plans for public and private telecommunications systems, and advises the governor on policy and procurement practices. In addition to creating the office, the legislation established a joint legislative study committee to help bring competitive forces to bear on the telecommunications marketplace. The key issue for the committee will be universal access---making sure that service is available everywhere. This is particularly important for Arizona because of the state's rural character and unevenly distributed population.

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##### *Infrastructure and policy planning*

The Governor's Commission for the Study of the Telecommunications and Information Industry in Arizona was created by Executive Order 94-12, issued in July 1994. The commission consisted of representatives of the governor's office, the departments of administration and commerce, the Senate and the House of Representatives, the Arizona State Public Information Network, and the state economic development agency. In March 1995 the commission published its final report, **Arizona Telecommunications: Leadership Through Partnership for Competitive and Innovative Information Industry.**



The report recommended that a Telecommunications Policy Office be established for visible and effective leadership.

The report makes a number of recommendations to the Arizona Corporation Commission (ACC), urging it to move the state rapidly to a competitive, innovation-friendly telecommunications environment; to pay special attention during the transition period to the need of rural, border, and Native American communities; and to create a universal service support mechanism to ensure that all residents have access to affordable basic telephone service. The legislature was also urged to classify certain rural, Native American, and low-income areas as telecommunications development zones, in which public-private partnerships would be encouraged to maximize access and information equality.

The report also recommended that an **Arizona Telecommunications and Information Council** (ATIC) be established. ATIC is a public-private cooperative consultation group representing the state's business sector, telecommunications providers, education and research institutions, local governments, health care providers, rural communities, economic development officials, and Native American tribes. Its mission is to drive implementation of an information applications and telecommunications infrastructure that supports economic growth in Arizona. ATIC will support the Telecommunications Policy Office in advocating legislation and building awareness of telecommunications opportunities among Arizona's businesses and citizens. ATIC will also work with the Arizona Technology Development Authority to organize advanced telecommunications prototype projects.

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### *Applications*

#### **Public access**

The Arizona state university system operates the **Arizona State Public Information Network** (ASPIN), which is based at Arizona State University. ASPIN helps Arizona's public organizations and communities connect to the Internet. Phase I connected the three primary urban areas of Flagstaff, Phoenix, and Tucson with a statewide backbone; within these areas connections have been provided to many organizations (more than 50 in Phoenix). Phase II, aided by National Science Foundation funding, extended the backbone to the state's eight rural community colleges and their communities. Phase III will connect the state's K-12 schools to the backbone, developing a robust educational network. ASPIN also staffs and supports three statewide Network Information Centers, providing a one-stop reference point and help desk for Internet users. ASPIN will assist Navaho Community College, which just received a NTIA/TIIAP grant, in establishing the **Navajo Learning Network**, connecting seven Navajo Nation community college campuses and eventually all K-12 schools as a single virtual campus linking educational and community resources.

**PhoenixNet** provides a broad range of electronic services and information to citizens, with an emphasis on elderly, disabled, and economically disadvantaged citizens. Senior centers, community centers, libraries, and nonprofit special needs centers throughout the city are being equipped with workstations for public access to city information and services, some including technology for the disabled. Aided by NTIA/TIIAP grants, Phoenix has a well-designed plan to

develop online information resources that goes beyond general public access to ensure that underserved populations have access.

The **State of Arizona Public Access System** provides dial-in modem access to information on corporations, limited liability companies, trademarks, tradenames, and limited partnerships operating in Arizona. The system requires a \$36 startup fee and a deposit account with the Arizona Corporation Commission to cover the \$0.50 per minute usage fee. Although it provides considerable access to state public records for the business and legal communities, the deposit account model precludes casual or occasional public usage.

The Department of Administration operates a World Wide Web page (with links to Gopher servers and other websites) that provides public access to information maintained by various state agencies and organizations. At the time of writing, the governor's office and the secretary of state's office were preparing to open their home pages on the World Wide Web. The governor's page will include the full text of a recently completed report on universal access to telecommunications services.

The Arizona Legislative Information System operates a website, **ALIS Online**, that offers users access to member's biographies, committee assignments, status and full text of bills, Arizona statutes, a legislative calendar, and information about the Arizona legislative process.

In 1993 the Arizona Supreme Court got a \$119,000 federal grant for a three-site pilot project called **QuickCourt**. Under the project electronic kiosks similar to ATM machines were installed at courthouses. An English- or Spanish-speaking narrator on a video touchscreen guides users through a variety of court processes, including paying parking fines, filing for divorce, or entering a not-guilty plea in the criminal courts. On-screen text, written at a fourth-grade reading level, accompanies the narration. QuickCourt produces legal documents that can be used in court proceedings, including all the forms necessary to file for divorce and calculate child-support payments. The free kiosks are linked to the courts' computers, so court dates can be arranged on the spot. The system conducted nearly 24,000 transactions in its first year of operation. In 1994 the program won a \$100,000 award for Innovations in State and Local Government from the Ford Foundation. A similar system has been introduced in Utah.

**AZConnect**, a private network operated from the Phoenix area, bills itself as an "exclusive political/public affairs network that empowers community members through the exchange of diverse ideas and information about government." The group's website sponsors electronic "town hall" meetings that feature live, online discussions with elected officials and policy leaders on local and state issues. The website also offers information and email connections to state and federal elected officials, Arizona media contacts, and news pieces about the governor and other elected officials.

## **Economic development**

For the past two years the **Datalink project** has been funded by the Arizona legislature for study and pilot trials. The project's focus is the facilitation of trade within the Pacific Northwest economic region and throughout Canada, Mexico, and the United States through the discovery, cataloging, and routing of trade-related information such as trade leads and access to

databases about companies, government agencies, and industry associations. Consultants have developed a pilot website and proposed a range of models and implementation strategies. Decisions on funding, ownership, and execution are pending.

**Electronic Commerce Net (ECNet)**, one of the first broadband metropolitan area networks to be implemented and tested within the cable industry, is a joint pilot project of Cox Communications, Digital Equipment Corporation, and Arizona State University. ECNet has connected about 12 Phoenix manufacturing companies to support collaborative engineering, improve productivity, enhance product quality, and reduce time to market for new products. Using the existing cable network, this demonstration project can evolve to serve videoconferencing, concurrent computer-assisted design, multimedia warehousing, telecommuting, and high-speed Internet access needs in the years to come.

## Education

The **Northern Arizona University Network (NAUNet)** is an instructional interactive television (distance learning) system that the university is building to connect more than 20 independent sites with an extensive microwave network. NAUNet's classrooms are on the campuses of the university, ten community colleges, and five rural school districts. At the time of writing, however, there was little coordination between schools in different regions of the state, and little to no use of distance learning technology in grades K-12. Change is under way--the **NAU Learning Alliance (NAULA)** is a network of more than 100 satellite downlink sites across Arizona that participate in NAU satellite programs. And in partnership with Missouri, Oklahoma, and Washington leaders in satellite education, NAU has formed **IdeaNet** to connect 2,000 schools in 33 states to an interactive television and computer network with a wide range of programming.

**AzEdLink** is the current Internet access service for the K-12 educational community. For an annual fee of \$35, public school instructional, administrative, and support staff as well as affiliated community members and students dial in by computer modem for full Internet access. The service currently has a total of 3,000 users. The toll-free number used in the pilot program has been discontinued due to traffic and cost, but Flagstaff, Phoenix, Tucson, and Yuma all have local access numbers.

## APENDIX 3

### **Other State Telecommunications Organizations and Strategic Plans** (Compiled from respective State Websites and various other source materials)

#### **Ranked Number 1 (out of 50 States) - Michigan's Organization and Strategic Plan** (Ratings From a TechNet report dated July 17, 2003

[http://www.technet.org/press/Press\\_Releases/?newsReleaseId=2527](http://www.technet.org/press/Press_Releases/?newsReleaseId=2527) )

**Michigan Economic Development Corporation (MEDC)** is working in partnership with: the Governor's Office, Michigan State Government's Chief Information Officer (CIO) in the Michigan Department of Management and Budget (DMB), and the State's new Department of Information Technology, the Michigan Public Service Commission (MPSC), MiCTA (aggregator for telecommunications purchases by higher education and other non-profit and government organizations), Merit Network (a non-profit organization charged with developing and promoting advanced networking services for research and education in Michigan and beyond), and Michigan State University's Department of Telecommunication. MEDC has also worked with Federal Engineering, a nationally recognized telecommunications consulting firm out of Fairfax, Virginia.

#### **LinkMichigan (State-wide Strategic Plan)**

As the leader in aggressive broadband policy, Michigan has implemented the following strategies:

- The LinkMichigan initiative created a formal plan implemented under strong leadership from the Governor
- The initiative resulted in three legislative acts that created the Michigan Broadband Development Authority, the Michigan Extension Telecommunications Rights-of-Way Oversight Authority and a property tax credit incentive for deployment of new infrastructure

Launched in May 2001, the LinkMichigan initiative is working to transform Michigan's telecommunications infrastructure into one of the most robust and advanced in the nation. The four-part approach outlined in the May 2000 LinkMichigan Report includes:

1. Aggregating statewide telecommunication purchases to create a high-speed backbone,
2. Implementing taxing and permitting fairness,
3. Increasing access to information about the telecommunication infrastructure that exists in Michigan (Mapping and Community Telecomm Assessments)
4. Providing funds for regional telecommunication planning of last mile solutions.

Effective implementation of these policy recommendations has depended upon the concerted effort and support of numerous stakeholders throughout Michigan. While government, at all levels, must act as a facilitator to make LinkMichigan a reality, the aggregation concepts and activities outlined above are all premised by the assumption that the private sector will step forward to own, operate, and manage needed infrastructure.

#### **Regional Planning**

The LinkMichigan Regional Telecommunications Planning Program is an important part of the LinkMichigan plan. It will help local communities plan the infrastructure needed in their local areas. Grants of up to \$100,000 are available to assist the development of county or multi-county

telecommunications plans for improving and expanding Michigan's telecommunications infrastructure, so that high-speed Internet access and other advanced telecommunication services are available to all communities throughout the State. Communities that should participate in and which will benefit from the program include government, business, education, health care, families, and individuals. Distribution of funds is based on merit as defined in well constructed, documented and evaluated plans.

MEDC has contracted with the Technology Policy Group of the Ohio Supercomputer Center to conduct a statewide telecommunication survey, inventory, and assessment. Information from this survey, together with information from previous studies, will be made available on the LinkMichigan Web site. The availability of this information should reduce some of the work that would otherwise have to be done as part of each regional telecommunications planning activity.

## **Ranked Number 2 – Florida Telecommunications Organization and Plan**

### **Florida (ITFlorida)Telecommunications Advisory Boards**

In its work, including the development of policy recommendations, ITFlorida relies upon a number of separate advisory boards. The advisory boards, in turn, receive input from private and public sector subject matter experts who have a stake in Florida's technology future and who are committed to ensuring that future is bright. The following Boards are directly concerned with Telecommunications. Other Boards also concern themselves with the impact of broadband development on their respective issues.

#### **Digital Divide Advisory Board**

Objective(s): The Access & Digital Divide Advisory Board promotes policies to ensure that Florida's public and private sectors focus on bridging the gap between information-rich and information-poor, including those persons with special needs, in order to foster equal access to IT for all Floridians. This board works closely with the private sector, the state's Digital Divide Council, existing initiatives to bridge the digital divide (such as the Governor's PowerUp initiative), regional efforts (such as the Internet Coast's digital divide initiatives), and the Board of Education.

#### **e-Government Advisory Board**

Objective(s): The eGovernment Advisory Board, chaired by the Chief Information Officer for the State of Florida, promotes strategies to ensure that government institutions use technology to increase the quality and cost-effectiveness of their services, while also fostering broader use of information technologies among and between residents and businesses. The board also promotes the development of policies which ensure that government serves as a catalyst for advancing the digital economy by refocusing government procurement power and providing a critical mass of digital services. Government can and should become more responsive, more efficient, and less costly.

#### **Technology Infrastructure Advisory Board**

Objective(s): The Technology Infrastructure Advisory Board is composed of representatives from Florida's telecom, cable, and fiber sectors, and the Florida NAPs. This board designs policies to ensure that Florida possesses the leading telecommunications, cable, and fiber networks in the country. The board also focuses on policies to determine how the State might better leverage and utilize its substantial military technology infrastructure.

## Strategic Plan Summary

- The State Technology Office coordinates state broadband efforts. The STO also oversees Florida's Digital Divide Council Clearinghouse that identifies digital divide efforts, best practices and provides grants to sustain projects.
- The state leases all communications facilities from the telecommunications industry to promote broadband deployment, aggregating their demand.
- In an effort to increase network access points, broadband suppliers receive tax refunds for equipment purchases.
- Public-sector users receive discounts for broadband access
- Florida encourages the use of Wi-Fi deployment, using high encryption standards.

## Ranked Number 4 - State of Texas Telecommunications Organization and Plan

### Telecommunications Planning and Oversight Council (TPOC) and DIR/TSD Staff

#### TPOC Members

The Telecommunications Planning and Oversight Council (TPOC) is the group legislatively tasked with oversight of the State's telecommunications networks, including the Texas Agency Network (TEX-AN), and the Capitol Complex Telephone System (CCTS). This is intended to provide information about the twelve members identified by House Bill 1576 (78R) and by Texas Statute.

#### TPOC Membership:

##### MEMBERS REPRESENTING

State Comptrollers Office

Texas Building and Procurement Commission

Large State Agencies

Small State Agencies

Higher Education

The University of Texas System

Texas A&M University System

Public Education, K-12

Local Government

The Public, Telecommunications Expertise

The Public, Telecommunications Expertise

Health and Human Services Commission

Department of Information Resources,

Interim Executive Director

### Staff for the TPOC from the Telecommunications Services Division

Director

Assistant Director for Operations

Assistant Director for Customer

Relations and Solutions

Assistant Director for Planning

Planning Manager

Planning Analyst

Planning Analyst

Planning Administration

### TEXAS TPOC Committees, Task Forces and Working Groups

The Telecommunications Planning and Oversight Council (TPOC) periodically appoints people and/or solicits volunteers to accomplish specific tasks and objectives. This page lists and describes these people, who are organized variously as committees, advisory task forces or working groups.

#### List of New Committees, Task Forces and Working Groups

TEX-AN Advisory Task Force (TEX-AN ATF) - This group was made up of mainly of users of the TEX-AN 2000 network, both voluntary and appointed members. The groups task was to develop Performance Measures and Service Level Objectives for the TEX-AN 2000 network. The Task Force successfully

accomplished their mission, the results of which will be available on the Performance Measures website (website design currently in progress).

Capital Complex Advisory Task Force (CCTS ATF) - This group was made up of mainly of users of the CCTS network and drew heavily on the work and experience of the TEX-AN ATF. It also successfully accomplished their mission, the results of which will be available on the Performance Measures website (website design currently in progress).

2003-2007 Strategic Plan Advisory Task Force - This group, comprised of customers of the TEX-AN network with representatives from large and small state government agencies, higher education, K-12 education, and local governments, successfully produced the Strategic Plan for State Government Telecommunications Services 2003-2007 (397 KB, RTF, Viewer).

## **Ranked Number 8 -State of Virginia Telecommunications Organization and Plan**

### **Organization**

Secretary of Technology	Deputy Secretary of Technology And Executive Director of the Digital Opportunities Task Force
Assistant Secretary of Technology	
Director-Information Technology Dept.	Director, Technology Planning Department

**Information Technology Department**—Operates the state’s data center, which provides data processing services to state agencies, and oversees telecommunications contracts

**Technology Planning Department**—Conducts strategic planning for state information technologies, reviews agencies’ technology plans, develops standards and reviews procurements; also oversees the Electronic Government Implementation Division

**Digital Opportunity Task Force**—Builds a community-based infrastructure, in partnership with government and industry, to bridge the digital divide in Virginia

**Virginia Research and Technology Advisory Commission** - Advises the governor on how to allocate the Commonwealth Technology Research fund

### **Virginia Plan**

Virginia has developed a formal broadband plan under the Secretary of Technology and Virginia Research and Technology Planning Department. The plan has 8 initiatives

- Revolutionize service delivery to our customers through implementation of a customer-facing Internet portal and increasing the quantity, quality, and adoption of online services, particularly in the area of online licensure and interactive forms.
- Consolidate IT infrastructure and provide centralized services as a technology utility. The plan also calls for developing a comprehensive, statewide information security program and for overhauling state administrative systems in the area of finance, planning and budgeting, and human resources.
- Plan, budget, and track IT expenditures by developing a capital planning and funding process for IT, developing a comprehensive technology management policy, and improving systems to track IT expenditures.
- Manage IT procurement by developing and implementing a best practice model for effective and timely IT procurements.

- Increase federal research and development funding to industry and Virginia's colleges and universities, including historically black colleges and universities
- Increase commercialization of intellectual property from Virginia's labs, entrepreneurs, and institutions of higher education, and grow entrepreneurial companies.
- Increase statewide broadband deployment, especially in Virginia's rural areas, to enhance economic development. Virginia's state-owned property is available for wireless antennas.
- Promote technology-based economic development in Virginia by "growing" technology companies.



## APPENDIX 4

### The State Broadband Index - Summary Findings for Top 10 States

(From A *TechNet* Report - July 17, 2003)

## 1. Michigan

As the leader in aggressive broadband policy, Michigan has implemented the following strategies:

- The LinkMichigan initiative created a formal plan implemented under strong leadership from the Governor
  - The initiative resulted in three legislative acts that created the Michigan Broadband Development Authority, the Michigan Extension Telecommunications Rights-of-Way Oversight Authority and a property tax credit incentive for deployment of new infrastructure.
- Michigan has strategically eliminated barriers to deployment
  - The METRO Act eliminated disparities in rights-of-way access charges and delays across the state, and in the process ensured that the access fees are relatively low and based on cost.
  - Under METRO, Michigan has implemented a fixed right-of-way fee, standardized application, central authority for fee collection, a 45 day time limit on municipality action on permit, a streamlined process for resolution of disputes, and limits on local regulations
- Michigan aggressively promotes broadband deployment
  - Michigan Broadband Development Authority provides loans to broadband providers and users in an effort to fill in the gaps of deployment to under-served communities.
  - Michigan has assessed statewide deployment to pinpoint the areas that lack broadband.
  - A plan to aggregate public-sector network use is currently underway.
- Michigan promotes broadband use and applications
  - MI Department of Corrections uses telemedicine to reduce costs
  - Distance learning is available via Virtual University and Virtual High School

## 2. Florida

- Florida has strategically eliminated barriers to deployment
  - Florida has simplified right-of-way fees. The Florida Communications Services Tax collects a single tax comprised of a state and local communications service tax. Municipalities receive .24% of the tax in lieu of right-of-way fees.
- Florida actively promotes broadband deployment and broadband access
  - The State Technology Office coordinates state broadband efforts. The STO also oversees Florida's Digital Divide Council Clearinghouse that identifies digital divide efforts, best practices and provides grants to sustain projects.
  - The state leases all communications facilities from the telecommunications industry to promote broadband deployment, aggregating their demand.
    - In an effort to increase network access points, broadband suppliers receive tax refunds for equipment purchases.
    - Public-sector users receive discounts for broadband access
    - Florida encourages the use of Wi-Fi deployment, using high encryption standards.
- Florida actively uses and encourages innovative broadband applications
  - Delivering pediatric care through telemedicine and the initiative of Telehealth & Education
  - Distance learning through Virtual Schools and libraries
  - homeland security via the Law Enforcement Radio System
  - Development of Intelligent Transportation Systems
  - Streaming video of legislative activity.

## 3. Missouri

- Missouri has taken steps to eliminate impediments from right-of-way permits
  - 31 day limit for municipalities to take action on right-of-way permit requests for specific excavations
  - Fees are based on the actual substantiated costs reasonably incurred by the political subdivision in managing the public right of way.
  - Local regulations that set requirements unrelated to right-of-way usage and charging for in-kind compensation in return for ROW are prohibited.
  - Provides a streamlined resolution for rights-of-way disputes.
- Missouri owns a backbone, MORENet, which provides innovative application to the public-sector
  - Provides Internet connectivity, access to Internet2, technical support, videoconferencing services and training to Missouri's K-12 schools, colleges and universities, public libraries, health care, state government and other affiliates.
- Missouri has promoted broadband applications through telemedicine funding and distance learning programs.

## 4. Texas

- Texas has developed a strategic plan under the Telecommunications Infrastructure Fund Board.
  - The fund awards grants and loans for educational institutions, libraries, and non-profit hospitals (it looks like the governor vetoed it in the budget...)
- Texas has taken steps to eliminate right-of-way barriers to deployment
  - Though Texas does not have a time limit for municipalities to act on permits, it requires that a reasonable effort be made not to delay or cause undue burden
  - Municipalities are prohibited from charging in kind compensation beyond ROW fees
  - Texas has a fixed fee rate
- Texas actively promotes broadband deployment
  - Texas encourages competitive building access.
  - Texas allows Austin Energy's property to be available for wireless antennas for a fee
  - Texas has gone beyond FCC's unbundling requirements in interconnection disputes.
  - Texas owns Texas Agency Network which provides long distance voice (AT&T) and statewide data services (SBC) to all state agencies. It offers discounts and loans to public sector users for access.
- Texas has a telemedicine program, a distance learning program and streaming video of legislative activity.

## 5. Ohio

- Ohio has a formal plan in place to guide Ohio's broadband vision
  - Ohio has assessed its broadband deployment in conjunction with the Technology Policy Group to aid deployment efforts.

The Broadband Initiative is composed of 5 components to spur broadband

- Ohio Broadband Link is an effort to aggregate the purchasing power of businesses to obtain affordable rates on broadband services
  - Third Frontier Network is a high-speed link for Ohio college and research facilities
  - ECommunities is a pilot program in which the state will provide broadband services to 2 rural Ohio communities
  - EVantage Ohio is an effort to train small businesses about e-commerce
  - The State Coordinating Mechanism coordinates and reviews broadband activity.
- Ohio has taken steps to eliminate right-of-way barriers to deployment.
    - 30 day limit on permit action by municipalities
    - A reasonable cost limit on permit fees, limited to the recovery of the direct incremental costs incurred by the political subdivision in inspecting and reviewing any plans and specifications and in granting the associated permit.

- Ohio's Access Appalachia program assesses the supply and demand of the 29 counties in the Appalachian mountains and outlines a plan for rural deployment
- Ohio actively uses broadband application through its telemedicine program, Ohio One; several distance learning networks, and streaming video of the legislature.

## 6. Washington

- Washington has taken steps to eliminate right-of-way barriers
  - Limits the number of days for a municipality to act to 30 days
  - Uses a reasonable cost limit for permit fees
  - Prohibits local regulations that set requirements unrelated to rights-of-way usage
  - Prohibits municipalities from charging in kind compensation for ROW access
- Washington actively promotes broadband deployment
  - Washington encourages competitive building access.
  - Washington operates its own state-owned backbone, K-20 and Statewide Enterprise Network.
  - Washington Department for Community Trade and Development provides grants to suppliers for broadband deployment.
  - Wash has a Center to Bridge the Divide to address the digital divide.
- Washington supports the development of online application for government applications.
  - Washington State's Department of Information Services established a Digital Government Applications Academy where state agencies work together and collaborate to create online applications for their needs. Projects result in an Applications Template and Outfitting Model (ATOM), which provides a guide to building and implementing Internet applications and includes information on policies, business, technical, project management, and authorizing requirements for government e-commerce applications.

## 7. Kansas

- Kansas has taken steps to eliminate the right-of-way barriers to deployment
  - 30 day limit for municipalities to act on permits
  - Municipalities are prohibited from charging in-kind compensation beyond ROW fees
  - Fees are limited to reasonable cost
  - Kansas regulates wholesale broadband access beyond FCC mandated unbundling.
- Kansas has a map of current broadband deployment to aid further investments.
- Kansas' Kan-ed network supplies access for schools, libraries and hospitals. Through this network Kansas provides telemedicine and distance learning.
- Kansas has innovative broadband applications such as video arraignment services and live streaming audio of legislative activities.

## 8. Virginia

- Virginia has developed a formal broadband plan under the Secretary of Technology Virginia Center of Innovative Technology. The plan has 8 initiatives:
  - **Revolutionize service delivery to our customers** through implementation of a customer-facing Internet portal and increasing the quantity, quality, and adoption of online services, particularly in the area of online licensure and interactive forms.
  - **Consolidate IT infrastructure and provide centralized services** as a technology utility. The plan also calls for developing a comprehensive, statewide information security program and for overhauling state administrative systems in the area of finance, planning and budgeting, and human resources.
  - **Plan, budget, and track IT expenditures** by developing a capital planning and funding process for IT, developing a comprehensive technology management policy, and improving systems to track IT expenditures.
  - **Manage IT procurement** by developing and implementing a best practice model for effective and timely IT procurements.
  - **Increase federal research and development funding** to industry and Virginia's colleges and universities, including historically black colleges and universities
  - **Increase commercialization of intellectual property** from Virginia's labs, entrepreneurs, and institutions of higher education, and grow entrepreneurial companies.
  - **Increase statewide broadband deployment**, especially in Virginia's rural areas, to enhance economic development.
  - **Promote technology-based economic development** in Virginia by "growing" technology companies.
- Virginia has taken steps to eliminate right-of-way barriers to deployment
  - 45 day limit on permits
  - fixed rate for fees, prohibits municipalities from in-kind compensation
- Virginia's state-owned property is available for wireless antennas.
- Virginia is active in promoting broadband access
  - CovaNet and Net.Work. Virginia provides access for both the public and private sector at discount rates
  - COVANet brings infrastructure into areas that otherwise may not be served.
  - Virginia aggregates demand for schools, agencies and libraries.
  - Virginia has a digital divide program
- Virginia has actively supported broadband applications
  - Virginia telemedicine network
  - Distance learning
  - Wireless E-911

## 9. Colorado

- Colorado has taken steps to eliminate right-of-way barriers to deployment
  - Encourages coordinated rights-of-way with multiple providers.
  - Reasonable cost limit to fees.
  - Prohibits municipalities from demanding in kind compensation beyond ROW fees
- Colorado makes state-owned property available to wireless antennas
- Colorado High Speed Digital Network and the Multi-use Network is a private/public partnership
  - The MNT aggregates state networks for libraries, schools, local governments, and hospitals
  - The High Speed Digital Network allows businesses to connect for a low price
- Rural Technology Enterprise Zone provides tax incentives for rural deployment.
- Colorado actively promotes the use of broadband applications
  - Expanding telemedicine services
  - Distance learning K-12 programs
  - Live streaming of governor's state of the state address

## 10. Iowa

- Iowa has taken steps to eliminate right-of-way barriers to deployment
  - Offers streamlined resolution of disputes
  - State encourages coordinated rights of way with multiple providers
  - Reasonable cost limits on fees
  - Prohibition on municipalities to ask for in kind compensation for ROW access
- Iowa Communications Network- The Iowa Communications Network offers applications such as distance learning, telemedicine, telejustice to schools, libraries, hospitals and law enforcement agencies through its statewide network.